REMARKS

This Amendment is in response to the Office Action dated March 8, 2004. In the Office Action, the Examiner rejected claims 19, 34, and 37 under 35 U.S.C. § 102(b) as being anticipated by Solinsky, (U.S. Patent No. 5,142,400) (hereinafter *Solinsky*). Claim 20 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Solinsky.*

Claims 1-18, 21-33, and 39-42 were allowed. Claims 35, 36, and 38 were objected to as being dependent on a rejected base claim, but would be allowed if rewritten in independent form. No claims have been amended or cancelled herein. Claims 1-42 remain pending in the application. For the reasons set forth below, the Applicants respectfully request reconsideration and allowance of all pending claims.

CLAIM REJECTIONS - 35 U.S.C. § 102

A claim is anticipated only if each and every element of the claim is found in a single reference. M.P.E.P § 2131 (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987)). "The identical invention must be shown in as complete detail as is contained in the claim." M.P.E.P. § 2131 (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226 (Fed. Cir. 1989)).

Claim 19 was rejected under 35 U.S.C. § 102(b) as being anticipated by *Solinsky*. Claim 19, in its original form, recites,

19. An integrated optical component comprising a ***monolithic*** optically-translucent ***substrate in which a plurality of optics are formed***, including:

a receiver optic having a first focal point and configured to receive a substantial portion of an incoming optical beam and direct the optical beam toward the first focal point; and

a ***plurality of transmitter optics***, each having a respective focal point and configured to receive light emitted from a respective light source disposed proximate to the respective focal point and direct the light outward as a respective outgoing optical beam. (Emphasis added).

In support of the rejection of claim 19, the examiner states,

> ... Solinsky discloses (in figures 103) an integrated optical component comprising a monolithic optically-translucent substrate (abstract, lines 22-26) in which a plurality of optics are formed, including a receiver optic (14) having a first focal point (24) and configured to receive a substantial portion of an incoming optical beam and direct the optical beam toward the first focal point; and a plurality of transmitter optics (12) (column 4, line 67), each having a respective focal point (22) and configured to receive light emitted from a respective light source disposed proximate to the respective focal point and direct the light outward as a respective outgoing optical beam as shown in figures 1 and 3.

A disclosed embodiment of the invention will now be discussed in comparison to the applied reference. Of course, the discussion of the disclosed embodiment, and the discussion of the differences between the disclosed embodiment and the subject matter described in the applied reference, do not define the scope or interpretation of any of the claims. Instead, such discussed differences are intended to merely help the Examiner appreciate important claim distinctions discussed thereafter.

Claim 19 concerns the embodiment shown in Figure 10 of the present application. As stated in the specification (Page 15, lines 9-13, term clarification added in brackets),

> ... an integrated optic component 151 shown in FIGURE 10 includes a plurality of Tx [transmitter] optics 153, 155, 157 and 159 and an Rx [receiver] optic 161. Respective light sources 163, 165, 167, and 169 are disposed approximately at the focal points of the Tx optics so as to produce respective transmit signals 173, 175, 177, and 179.

In contrast to the claimed embodiment of Claim 19, *Solinsky* does not employ an integrated optical component comprising a <u>monolithic</u> optically-translucent substrate (meaning the optical component is formed out of a single piece of material).

Figure 3 shows details of the transmitter and receiver optics employed by *Solinsky*. As illustrated in detail in Figure 3, and stated in column 5, lines 12-37,

> Referring to FIGS. 1 and 2, transmitter optics 12 and receiver optics 14 comprise ***a matched pair of front surface reflecting telescopes having essentially identical Cassegrainian configurations***. Optics 12 is for transmitting and optics 14 is for receiving optical beams. Optics 12 and 14 are rigidly mounted in relation to each

> other such that their optical axes are offset but boresight aligned in parallel. Optics 12 and 14 are attached to the main satellite platform (not shown) with a gimballed mounting (not shown). The pointing motion is controlled by one or more motors (not shown) in any suitable manner known in the art.
>
> ***Transmitter optics 12 and receiver optics 14 are more fully illustrated in FIG. 3***. Optics 12 and 14 comprise ***parabolic transmitter and receiver primary reflectors 15 and 16***, respectively. Primary reflectors 15 and 16 have a transmitter primary reflector aperture 17 and a receiver primary reflector aperture 18 centered at their respective vertices. ***A hyperbolic transmitter secondary reflector 19 and a hyperbolic receiver secondary reflector 20 are optically aligned with primary reflectors 15 and 16, respectively. Secondary reflectors 19 and 20 are interposed between primary reflectors 15 and 16 and their corresponding primary reflector focal points 22 and 24, respectively***. (Emphasis added)

It is clear from above the *Solinsky* does not employ a monolithic integrated optical component for either transmitter optics 12 or receive optics 14. Certainly, *Solinsky* does not teach or suggest using a monolithic integrated optical component including both transmitter *and* receiver optics. Since each and every element of the claim 19 is not disclosed by *Solinsky*, the rejection of claim 19 under 35 U.S.C. § 102(b) as being anticipated by *Solinsky* is improper, and should be withdrawn. Furthermore, claim 20, which depends from claim 19, is patentable over *Solinsky* for at least the same reasons as claim 19.

With respect to the rejection of claims 34 and 37, the examiner asserts the *Solinsky* discloses all elements of the corresponding claimed methods, referencing column 1 lines 35-46 and column 3, line 47- column 4, line 13.

Claim 34 recites,

34. A method for controlling a position of a free space optical (FSO) transceiver, comprising:

directing a portion of an incoming optical signal received by ***a monolithic integrated optic component*** disposed in the FSO transceiver towards a optical beam

position sensor ***using a plurality of optics defined in the integrated optic component***;

determining a positional error based on data provided by the optical beam position sensor; and

adjusting a position of the FSO transceiver based on the positional error.

(Emphasis added)

This method relates to use of the integrated optic component embodiment of Figures 9 (without use of the TIR reflector, such as shown in Figure 5) and the control system embodiment of Figure 14.

As discussed above, *Solinsky* does not employ a monolithic integrated optic component for receiving signals. Rather, multiple non-integrated optical components configured as a ***surface reflecting telescope having a Cassegrainian configuration*** are employed.

Clearly, *Solinsky* does not disclose all of the elements of the claimed method of claim 34. Accordingly, the rejection of claim 34 under 35 U.S.C. § 102(b) as being anticipated by *Solinsky* is improper, and should be withdrawn. Furthermore, each of currently objected-to claims 35 and 36 are now in condition for allowance based on the patentability of their base claim 34.

The method of claim 37 relates to use of the integrated optic component embodiment of Figures 9 (including use of the TIR combiner) and the control system embodiment of Figure 14. In addition to the use of a monolithic integrated optic component, the method of claim 37 further employs the use of a total internal reflection (TIR) combiner. Total internal reflection involves redirection of light at interfaces having dissimilar indexes of refraction. It is not the same as a reflection observed with a conventional mirrored optic (i.e., reflector), such as used in Cassegrain telescopes. For example, receiver optics 14 uses a primary reflector 16 and a hyperbolic receiver

secondary reflector 20. These do not employ total internal reflector. Nor does *Solinsky* disclose the use of a TIR combiner.

Clearly, *Solinsky* does not disclose all of the elements of the claimed method of claim 37. Accordingly, the rejection of claim 37 under 35 U.S.C. § 102(b) as being anticipated by *Solinsky* is improper, and should be withdrawn. Furthermore, currently objected-to claim 38 is in condition for allowance based on the patentability of its base claim 37.

Overall, none of the references singly or in any motivated combination disclose, teach, or suggest what is recited in the independent claims. Thus, given the above remarks, all independent claims are now in condition for allowance. The dependent claims that depend directly or indirectly on these independent claims are likewise allowable based on at least the same reasons and based on the recitations contained in each dependent claim.

If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to the allowability of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.

Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

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R. Alan Burnett
R. Alan Burnett
Reg. No. 46,149

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025-1026